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IS 6682 (1991): Morse Taper Extension Sockets [PGD 32:  
Cutting tools]

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( पहला पुनरीक्षण )

*Indian Standard*

MORSE TAPER EXTENSION SOCKETS—  
SPECIFICATION

( *First Revision* )

UDC 621.9-229.211.6

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BUREAU OF INDIAN STANDARDS  
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NEW DELHI 110002

## **Drills and Reamers Sectional Committee, PE 10**

### **FOREWORD**

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by Drills and Reamers Sectional Committee had been approved by Production Engineering Division Council.

This standard was first published in 1972 superseding IS 2608 : 1964 'Reduction sleeves and extension sockets for morse tapers' which was revised and split into two separate standards as morse taper extension sockets and morse taper reduction sleeves. This standard gives the requirements for morse taper extension sockets and also gives their dimensions and tolerances. Subsequently upon changing technology in Indian industries, this standard has been taken up for revision.

The following are the main modifications made in this revision:

- a) Scope has been reworded indicating that this standard applied to the tanged end morse taper shank sockets.
- b) In Table 1 value of radius 'r' included in line with DIN 2187-1971.
- c) Following changes have been made in figure:
  - i) The shape of the tang end made as per ISO 238-1974.
  - ii) The surface grade numbers indicated in place of triangles.
  - iii) The radius 'r' included in the figure.
- d) Dimensions of cotter slots with taper keys have been deleted (separate Indian Standard identical to ISO 1080-1975 is under preparation. Till this standard is published, reference shall be made to ISO 1080-1975 'Machine tools — Morse taper shanks — Cotter slots with taper keys for cotter slot dimensions').

In the formulation of this Indian Standard assistance has been derived from the following publications:

**ISO 238 - 1974** Reduction sleeves and extension sockets for tool with morse taper shank, issued by the International Organization for Standardization (ISO).

**DIN 2187 - 1971** Extension sockets for tools with morse taper shank, issued by Deutsches Institut für Normung (DIN).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

**AMENDMENT NO. 1 APRIL 1994**  
**TO**  
**IS 6682 : 1991 MORSE TAPER EXTENSION**  
**SOCKETS — SPECIFICATION**

*( First Revision )*

*(Page 1, clause 2)* — Substitute the following:

'IS 13776 :1993/ ISO 1080 : 1975	Machine tools — Morse taper shanks — Cotter slots with taper keys'
	<i>in place of</i>
—	Morse taper shanks 'cotter slots with taper keys ( <i>under preparation</i> )'

*(Page 1, clause 7.3)* — Substitute the following for the existing matter:

'7.3 Unless otherwise specified, the morse taper extension sockets shall be supplied without cotter slots. If required with cotter slots, the dimensions shall be according to IS 13776 : 1993.'

*( PED 10 )*

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Reprography Unit, BIS, New Delhi, India

*Indian Standard***MORSE TAPER EXTENSION SOCKETS —  
SPECIFICATION***( First Revision )***1 SCOPE**

This standard covers the dimensions and requirements for morse taper extension sockets suitable for tanged end morse taper shanks according to Type B of IS 1715 : 1986 'Dimensions for self-holding tapers (second revision)'.

**2 REFERENCES**

The Indian Standards listed below are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
1715 : 1986	Dimensions for self-holding tapers (second revision)
2102 (Part 1) : 1980	General tolerances for linear and angular dimensions (second revision)
—	Morse taper shanks cotter slots with taper keys ( <i>under preparation</i> )

**3 GRADES**

Grade 1 — For machine tool industry

Grade 2 — For general engineering industry

**4 DIMENSIONS**

Shall be as given in Table 1, read with Fig. 1.

**5 MATERIAL**

Case hardening steel of tensile strength not less than 600 MPa in the core after case-hardening.

**6 HARDNESS**

Tapered portions case-hardened to 590 HV to 670 HV.

**7 GENERAL REQUIREMENTS**

**7.1** Dimensions for morse tapers according to IS 1715 : 1986 ( except for dimensions 'l' and 'a' which are greater for certain tools ).

**7.2** Tolerances on dimensions without any specified tolerances shall be of grade 'medium' according to IS 2102 ( Part 1 ) : 1980.

**7.3** Unless otherwise specified, the morse taper extension sockets shall be supplied without cotter slot. In case required with cotter slot, the dimensions shall be according to 'Morse taper shanks cotter slots with taper keys (*under preparation*)'.

**NOTE** — Till such time, the standard under preparation is published, the matter shall be as agreed to between the supplier and the purchaser.

**8 DESIGNATION**

A morse taper extension socket with tolerance Grade 2 suitable for external morse taper 4 and internal morse taper 3 shall be designated as:

Morse Taper Extension Socket IS 6682  
Grade 2 Morse 4 × 3

When morse taper extension socket as indicated above is required with cotter slot, it shall be designated as :

Morse Taper Extension Socket IS 6682  
Grade 2 Morse 4 × 3 with Cotter Slot

**9 WORKMANSHIP AND FINISH**

The morse taper extension socket shall be manufactured in one piece and shall be free from cracks, burrs and other manufacturing defects.

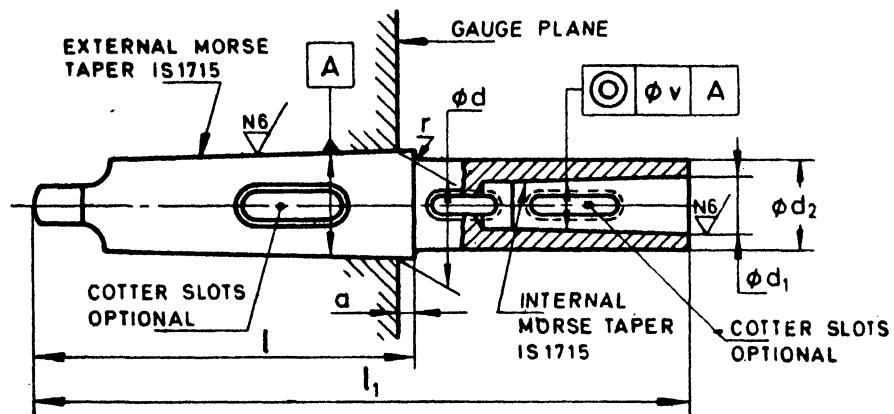
**10 MARKING**

Shall be marked with the grade, designating size and indicating the source of manufacture.

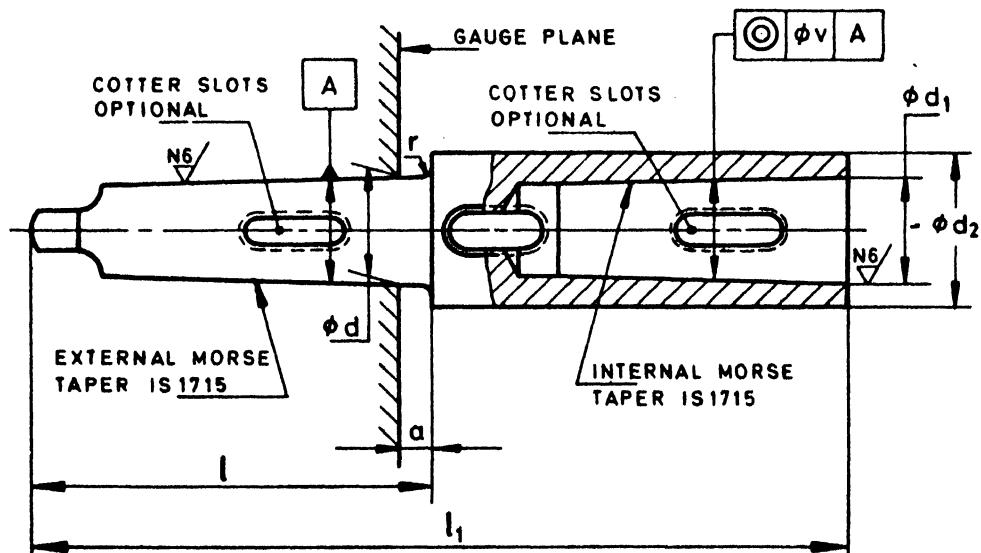
**11 PRESERVATIVE COATING AND  
PACKING**

Each morse taper extension socket shall be covered with a suitable rust-proofing material and wrapped in moisture proof paper. It shall then be packed according to the best trade practice.

N9 / ( N6 / )



$$d_2 < d$$



$$d_2 > d$$

FIG. 1 DIMENSIONS FOR MORSE TAPER EXTENSION SOCKETS

**Table 1 Dimensions for Morse Taper Extension Sockets**  
**( Clause 4, and Fig. 1 )**

All dimensions in millimetres.

External Taper				Internal Taper		$d_2$ Min	$l_1^{(1)}$ Min	$v$ Max		$r$
Morse Taper No.	$d$	$l$	$a$	Morse Taper No.	$d_1$			Grade 1	Grade 2	
1	12.065	69	7	1	12.065	20	145	0.008	0.015	1.6
				(2)	17.780	30	160			
2	17.780	84	9	1	12.065	20	160	0.008	0.015	1.6
				2	17.780	30	175			
				(3)	23.825	36	196			
3	23.825	103	9	1	12.065	20	175	0.008	0.015	1.6
				2	17.780	30	194			
				3	23.825	36	215			
				(4)	31.267	48	240			
4	31.267	124	6.5	(1)	12.065	20	200	0.008	0.015	1.6
				2	17.780	30	215			
				3	23.825	36	240			
				4	31.267	48	265			
				(5)	44.399	63	300			
5	44.399	156	6.5	(1)	12.065	20	232	0.010	0.020	2.5
				(2)	17.780	30	247			
				3	23.825	36	268			
			13.5	4	31.267	48	300			
				5	44.399	63	335			
6	63.348	218	8	(1)	12.065	20	294	0.010	0.020	4
				(2)	17.780	30	309			
				(3)	23.825	36	330			
				4	31.267	48	355			
				5	44.399	63	390			

<sup>1)</sup>  $l_1$  is specified as minimum is normal. To suit other requirements  $l_1$  shall be selected above this minimum, preferably in STEPS of 5 mm or even 10 mm.

NOTE — The extension sockets with internal tapers given within brackets are non-preferred.

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